

We claim:

- 1 1. A device for generating electromagnetic waves, in particular for data transfer
2 between a motor vehicle and a data storage medium, comprising:
3 an energy supply device for providing an alternating voltage;
4 an oscillating circuit to which the alternating voltage is applied for generating
5 the electromagnetic waves, and
6 a choke coil between at least one part of the energy supply device and the
7 oscillating circuit.
- 1 2. The device according to Claim 1, wherein the energy supply device has a
2 terminal capable of being switched over between two voltages which is connected
3 through the choke coil to an oscillating circuit terminal.
- 1 3. The device according to Claim 2, wherein the energy supply device has a
2 further terminal capable of being switched over between two voltages which is
3 connected through a capacitor or a transmitting coil of the oscillating circuit to the one
4 oscillating circuit terminal.
- 1 4. The device according to Claim 1, wherein the energy supply device contains a
2 DC voltage source, a converter coil and two push-pull switches, the DC voltage source
3 is connected by way of the choke coil to an inner tapping point of the converter coil
4 whose outer tapping points are connected in each case to one of the push-pull switches
5 which assume switching states in push-pull fashion, and the output voltage from the
6 outer tapping points of the converter coil is applied to the oscillating circuit.
- 1 5. The device according to Claim 4, wherein the converter coil is formed by an
2 autotransformer.

1 6. The device according to Claim 4, wherein a switch is provided between the DC
2 voltage source and the choke coil such that in the event of simultaneous closure of the
3 push-pull switches and opening of the switch the oscillation of the oscillating circuit
4 decays abruptly.

1 7. The device according to Claim 6, wherein the push-pull switches are switched
2 in tune to the natural frequency of the oscillating circuit, the switch is switched in tune
3 to the switching frequency of the push-pull switches and is operated with a selectable
4 pulse width.

1 8. The device according to Claim 6, wherein a terminal is provided between the
2 switch and the choke, to which is connected a free-wheeling diode.

1 9. The device according to Claim 4, wherein one terminal side of a diode is
2 connected between the choke coil and the inner terminal of the converter coil and the
3 other terminal side of the diode is connected to the DC voltage source.

1 10. The device according to Claim 4, additionally comprising a transformer,
2 having a primary coil and a secondary coil which are coupled magnetically, whereby
3 the primary coil is connected to the outer tapping points of the converter coil and one
4 output of the secondary coil is connected to the one oscillating circuit terminal and the
5 other output of the secondary coil is connected by way of a capacitor or a transmitting
6 coil of the oscillating circuit to the one oscillating circuit terminal.

1 11. The device according to Claim 4, wherein the converter coil is the primary coil
2 of a transformer, and one output of the secondary coil of the transformer, which is
3 magnetically coupled to the primary coil, is connected to the one oscillating circuit
4 terminal and the other output is connected by way of a capacitor or a transmitting coil
5 of the oscillating circuit to the one oscillating circuit terminal.

1 12. A method for operating a device for generating electromagnetic waves
2 comprising the steps of:
3 - providing an DC voltage by an energy supply device;
4 - applying the DC voltage to an oscillating circuit for generating the
5 electromagnetic waves;
6 - coupling a choke coil between at least one part of the energy supply device
7 and the oscillating circuit; and
8 - operating the choke coil in the saturation state at times during the transient
9 condition of the oscillating circuit.

1 13. The method according to claim 12, wherein the step of providing the DC
2 voltage is performed in accordance with data to be transmitted, and includes the step
3 of switching between two voltages at a frequency tuned to the natural frequency of the
4 oscillating circuit in order to identify a high level state or a low level state relating to the
5 data to be transmitted.

- 1 14. A method for operating a device for generating electromagnetic waves
2 comprising the steps of:
3 - providing an DC voltage by an energy supply device;
4 - switching the DC voltage to an inner tapping point of a converter coil;
5 - coupling the outer tapplings of the converter coil with an oscillating circuit;
6 wherein the switching and coupling can be performed in such a way that the oscillating
7 circuit decays abruptly.
- 1 15. The method according to claim 14, wherein the abrupt decay can be reached by
2 decoupling of the inner tapping point and grounding of the outer tapping point.
- 1 16. The method according to claim 14, wherein the switching closes while a
2 particular data state obtains or is operated in tune to the natural frequency of the
3 oscillating circuit with a selectable pulse width.
- 1 17. The method according to Claim 14, wherein a pulse width of the switching is
2 determined depending on the data to be transmitted.